

Remarks

Status of Claims

This paper is submitted in response to the non-final Office action mailed May 31, 2006. Claims 1-32 are pending in the application and stand rejected. Claims 20 and 30 are objected to. New claims 33-35 are submitted.

Specification

The abstract has been amended to not exceed 150 words. Paragraphs [0060], [0068], [0081], [0084], and [0095] are voluntarily amended to correct typographical errors. No new matter has been introduced.

Claim Objections

The Office action objects to claims 20 and 30 based on informalities. Claim 20 was amended to replace the word “form” with “from.” Claim 30 was amended to delete “multiple sensors for” and the second comma. Accordingly, Applicant respectfully requests withdrawal of these objections.

Amendments to Claim 1

Claim 1 is currently amended for clarification and is believed to be patentable over the art of record for at least the reasons discussed *infra*.

Claim Rejections – 35 U.S.C. §102(b)

The Office action rejects claims 1-2, 12-14, 20-21, and 23-25 as allegedly being anticipated by U.S. Patent No. 6,012,012 (Fleck '012) under 35 U.S.C. § 102(b). Applicant respectfully traverses.

Claim 1

Fleck '012 Does Not Discuss Data Fusion

Claim 1 refers to “each sensor communicating with onboard means for processing inputs from sensors, using data fusion.” The Office action alleges that Col. 5, lines 17-28 of Fleck '012 anticipates this portion of the claim by arguing that Fleck '012 “discusses the terminal recognizing the type of event happening with the vehicle based upon sensor data and then sends a message to the control center.” Applicant fails to see how this argument

supports a conclusion that Fleck '012 discloses “onboard means for processing inputs from sensors, using data fusion.”

In the “Summary of the Invention,” Fleck '012 discusses event-based standard acquisition. Col. 3, lines 18-29. According to Fleck '012, a “return signal is sent back from the vehicles to the control center only when one or more predefined events have actually occurred such as operation of windshield wipers as a sign of rain, or braking operations.” *Id.* Apparently, the “return signal to the service center, supplemented by time and position information about the event, gives the control center an overview of the general traffic situation in the area covered.” *Id.* Fleck '012 continues by stating that “braking and acceleration of the vehicle are detected as event-based information and transmitted to the control center with position and time information.” Col. 5, lines 7-10. According to Fleck '012, “[i]f event 14 occurs, the terminal recognizes this through the performance (braking) of the vehicle in the acquisition areas in question and a message is sent to control center 20 by mobile wireless means.” Col. 5, lines 17-20. The “message is linked to information regarding where the event occurred and the position range of the reporting vehicle.” Col. 5, lines 24-28. This allows “control center 20 [to] disseminate to all vehicles the information that event 14 (congestion) will occur if they travel through [that] segment of [the] roadway.” Col. 5, lines 32-35. The Applicant does not see any discussion that the terminal of Fleck '012 uses “onboard means for processing inputs from sensors, using data fusion.” In fact, the phrase “data fusion” does not appear in Fleck '012. Even assuming, *arguendo*, that a higher level of data fusion occurs in the control center of Fleck '012, this could hardly be considered onboard to the terminal.

*Fleck '012 Does Not Discuss Selecting a Path Including
Communicating Information from One Mobile Unit to Another*

In addition, claim 1 refers to “the processing means comprising means for selecting a path for communicating information, the path including at least communicating information from one of the mobile units to another mobile unit.” The Office action alleges that Col. 2, lines 40-49 and Col. 5, lines 17-28 of Fleck '012 anticipates this portion of the claim by arguing that “[t]he system decides to send the information to either the call center or nearby vehicles or both.” Applicant respectfully traverses. In order to better understand the distinctions between the claims in the present application and Fleck '012, sections of the present application and Fleck '012 will be explored.

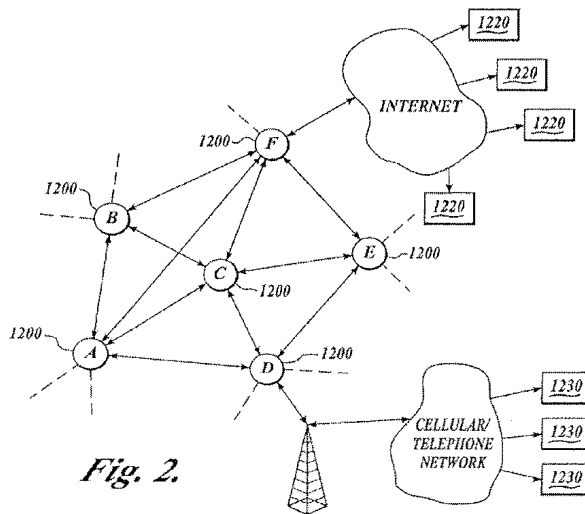


Fig. 2.

With reference to FIG. 2 of the present application, and for illustration purposes only, mobile unit A could communicate to the internet by communicating through mobile units C and then F. Alternatively, mobile unit A could communicate to the internet by communicating through mobile units B and then F. The “most efficient pathway is selected based on predetermined criteria, such as for example, proximity of the other mobile units to mobile unit A.” Present Application, ¶ [0060].

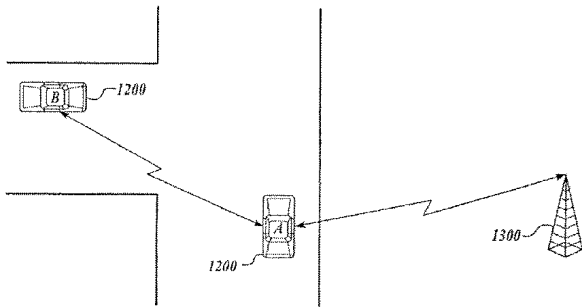


Fig. 3.

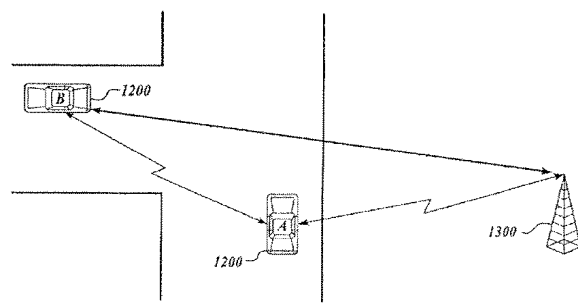


Fig. 4.

With reference to FIGS. 3 and 4 of the present application, and for illustration purposes only, communication between mobile unit 1200 B and tower 1300 may be (1) direct or (2) via mobile unit 1200 A. Accordingly, mobile unit 1200A “is not limited to a particular communications pathway.” Instead, mobile unit 1200A “is able to dynamically select a pathway based on communication conditions and predetermined criteria.” Present Application, ¶ [0061].

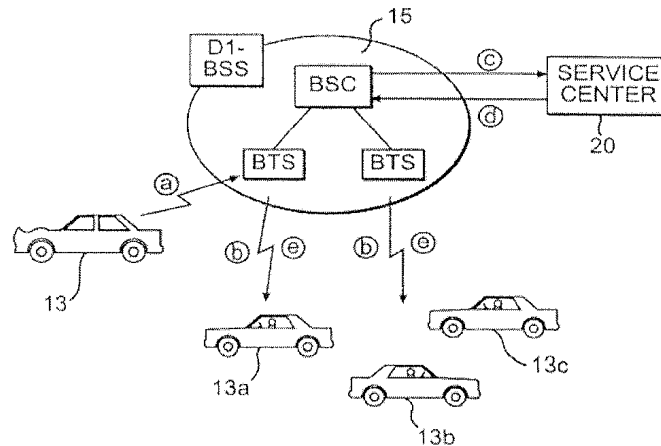


FIG. 4

With reference to FIG. 4 of Fleck '012, “position information on the location of the accident [13] plus historical travel information for determining the direction of travel are transmitted to the mobile wireless system [15] by using the fastest possible means of communication for the purpose.” Col. 2, lines 45-49 (emphasis added). The information “is then sent directly without preprocessing to all mobile wireless subscribers that can be reached in the respective wireless cell or neighboring wireless cells [13a, 13b, and 13c].” Col. 2, lines 50-52. Essentially, Fleck '012 discusses the terminal of the accident vehicle sending a message to its base station (e.g., base transceiver station (BTS)) of the mobile wireless system. Col. 5, line 65 – col. 6, line 3. The mobile wireless system (e.g., the base station controller (BSC)) analyzes the message and immediately causes a warning signal to be sent to other mobile wireless subscribers of the cells of origin. Col. 6, lines 4-10. In parallel, the mobile wireless system (e.g., the BSC) sends the message to the service center (the Office action refers to the service center as the ‘call center’).

At best, Fleck '012 only discusses ‘path selection’ with reference to the terminal transmitting information “to the mobile wireless system by using the fastest possible means of communication for this purpose.” Fleck '012, col. 2, lines 44-49. The Office action does not indicate where Fleck '012 explains what is meant by using the fastest possible means of communication, nor does Applicant see where Fleck '012 explains it. Applicant’s best guess is that Fleck '012 is referring to the terminal communicating with the base station using either the control channel (e.g., SMS) or the data portion of the voice channel. Accordingly, the communication path in Fleck '012 always includes sending information to the base station, but the terminal apparently may select different ways to transmit the information to the base

station (e.g., data channel or control channel). Therefore, Fleck '012 does not disclose “selecting a path for communicating information, the path including at least communicating information from one of the mobile units to another mobile unit” as referred to in claim 1 and discussed with reference to FIGS. 2-4 of the present application. Instead, the path always includes sending information from the terminal directly to its base station.

In fact, the BSC of Fleck '012 appears to be responsible for selecting a path to send a warning signal to (1) other mobile wireless subscribers of the cells of origin and/or (2) the service center. This can hardly be considered to be onboard to the terminal. For at least these reasons, claim 1 is patentable over Fleck '012. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 2 and 12-14

Claims 2 and 12-14 incorporate all of the limitations of claim 1 and are therefore patentable over Fleck '012 for at least the reasons discussed *supra*. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claim 20

Fleck '012 Does Not Discuss Data Fusion

Claim 20 refers to “an onboard processor[,] . . . the processor comprising means for selecting a path for communicating information processed by data fusion between at least one of the mobile units and a traffic communication center.” The Office action alleges that Col. 5, lines 17-28 of Fleck '012 anticipates this portion of the claim without supporting arguments. As discussed *supra*, Applicant does not see any discussion that the terminal of Fleck '012 uses “an onboard processor[,] . . . the processor comprising means for selecting a path for communicating information processed by data fusion between at least one of the mobile units and a traffic communication center.” In fact, the phrase “data fusion” does not appear in Fleck '012. Even assuming, *arguendo*, that a higher level of data fusion occurs in the control center of Fleck '012, this could hardly be considered onboard to the terminal.

*Fleck '012 Does Not Discuss Selecting a Path Comprising
Using Wireless Receiving Means and Wireless Transmitting Means of at least
One Mobile Unit to Another*

In addition, claim 20 refers to “the processor comprising means for selecting a path . . . between at least one of the mobile units and a traffic communications center, the path comprising using wireless receiving means and wireless transmitting means of at least one other mobile unit.” The Office action alleges that Col. 2, lines 40-49 of Fleck '012 anticipates this portion of the claim without supporting arguments. As discussed *supra*, Fleck '012, at best, only discusses ‘path selection’ with reference to the terminal transmitting information “to the mobile wireless system by using the fastest possible means of communication for this purpose.” Fleck '012, col. 2, lines 44-49. Assuming Fleck '012 is referring to the terminal communicating with the base station using either the control channel (e.g., SMS) or the data portion of the voice channel, Fleck '012 does not disclose “the processor comprising means for selecting a path . . . between at least one of the mobile units and a traffic communications center, the path comprising using wireless receiving means and wireless transmitting means of at least one other mobile unit.” Instead, the path of Fleck '012 always includes sending information from the terminal directly to its base station, not via another mobile unit.

For at least these reasons, claim 20 is patentable over Fleck '012. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 21 and 23-25

Claim 23 refers to “communicating location data for at least some of the mobile units from the mobile units through a communications path comprising receiving and transmitting means of other mobile units to a center, the center having means to receive, store and analyze location data to develop traffic condition information.” As discussed *supra*, Fleck '012 discloses sending information from the terminal directly to its base station, not via another mobile unit. In addition, the BSC of Fleck '012 appears to send the message to the service center. Therefore, at best, Fleck '012 discloses the terminal directly communicating with its base station and the base station (via the BSC) communicating with the service center.

Furthermore, claims 21 and 23-25 incorporate all of the limitations of claim 20 and are therefore patentable over Fleck '012 for at least the reasons discussed *supra*. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claim Rejections – 35 U.S.C. §102(e)

The Office action rejects claims 1-5, 8, 10, 15-24, and 26-29 as allegedly being anticipated by U.S. Patent No. 6,405,132 (Breed '132) under 35 U.S.C. § 102(e).

Claim 1

Data Fusion is Inappropriate for Breed '132

Claim 1 refers to “each sensor communicating with onboard means for processing inputs from sensors, using data fusion.” The Office action alleges that Col. 38, lines 54-67 of Breed '132 anticipates this portion of the claim by arguing that Breed '132 “discloses using neural fuzzy system computer algorithms to derive optimum vehicle warning and control signals in order to fuse the data received by all of the sensors and decide if there is a risk of an [sic] collision and if action needs to be taken.” Applicant respectfully traverses.

Breed '132 states that “[o]utputs from multiple sensors as described above are used in onboard vehicle neural network and neural-fuzzy system computing algorithms to derive optimum vehicle warning and control signals designed to avoid vehicle collisions with other vehicles or with other objects or hazards that may be present on given roadways.” Col. 38, lines 54-59. No mention is made of data fusion. In fact, Breed '132 states that

it is important to recognize that the RtZFTM system¹ **is not** a “sensor fusion” system. Sensor fusion is based on the theory that you can take inputs from different sensors and combine them in such a way as to achieve more information from the combined sensors than from treating the sensor outputs independently in a deterministic manner. The ultimate sensor fusion system is based on artificial neural networks, sometimes combined with fuzzy logic to form a neural fuzzy system. Such systems are probabilistic. Thus there will always be some percentage of cases where the decision reached by the network will be wrong. The use of such **sensor fusion, therefore, is inappropriate** for the “Zero Fatalities” goal of the invention.

Col. 64, lines 7-19 (emphasis added).

Breed '132 Does Not Discuss Selecting a Path for Communicating Information

In addition, claim 1 refers to “the processing means comprising means for selecting a path for communicating information.” The Office action alleges that Col. 49 – Col. 52 of Breed '132 anticipates this portion of the claim without supporting arguments. After

studying the cited portion, Applicant fails to see any reference to a “processing means comprising means for selecting a path for communicating information.” Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

For at least these reasons, claim 1 is patentable over Breed '132. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 2-5, 8, 10 and 15-19

Claim 3 refers to “the at least some mobile units receive input information about the real time location of other mobile units in proximity, and wherein the means for selecting a communication path for each of the at least some mobile units uses the received input information to select the information communication path.” As discussed *supra*, Breed '132 makes no reference to a “processing means comprising means for selecting a path for communicating information.” Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been.

Claim 4 refers to “the information compris[ing] diagnostic information about a mobile unit.” The Office action cites column 72, lines 23-27 which states “in order to completely eliminate automobile accidents, a diagnostic system is required on the vehicle that will provide advanced warning of any potential vehicle component failures.” No mention is made to “means for wireless transmitting of [this] information” or “communicating [this] information” as referred to in claims 1 and 4. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Claim 5 refers to “the information compris[ing] information about an environment surrounding a mobile unit.” The Office action cites column 39, lines 1-7 which states “object, obstacles and/or other vehicles located anywhere to the front, rear or sides of a given vehicle are considered in the fuzzy logic control algorithms in the derivation of optimal control and warning signals.” The warning signals could be used by the “given vehicle,” and no mention is made (in the portion cited by the Office action) to “means for wireless transmitting of [this] information” or “communicating [this] information” as referred to in claims 1 and 5. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

¹ Breed '132 indicates that “[p]resented herein is a plan to eliminate fatalities and injuries and to substantially reduce congestion.” “This plan has been named the ‘The Road to Zero FatalitiesTM’, or RtZFTM for short.” Col. 6, lines 27-31

Claim 8 refers to “the means for receiving and the means for transmitting of a first mobile unit each respectively receive and transmit information from at least one other mobile unit of a series of mobile units, at least one of the series of units in wireless communication with the Internet.” The Office action cites column 70, lines 28-32, column 71, lines 12-14, and column 75, lines 19-20. Column 70, lines 29-30 states “other forms of communication between vehicles are possible such as through the Internet.” Column 71, lines 10-14 states “the warning system could activate the vehicle headlights, tail lights, horn and/or the vehicle to vehicle, internet or infrastructure communication system to inform other vehicles, a traffic control station or other base station.” Column 75, lines 18-23 states “this can be accomplished via direct wireless broad band communication, or through another path such as via the Internet or through a base station, wherein each vehicle transmits its best estimate of its absolute location on the earth along with an estimate of the accuracy of this location.”

While these portions reference the ‘internet,’ Breed ’132 appears to discuss each vehicle being in communication with the internet – e.g., one vehicle could communicate to another vehicle via the internet. None of the portions of Breed ’132 cited by the Office action discuss “the means for receiving and the means for transmitting of a first mobile unit each respectively receive and transmit information from at least one other mobile unit of a series of mobile units, at least one of the series of units in wireless communication with the Internet” as referred to in claim 8 and discussed *supra* with reference to FIG. 2 of the present application. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Claim 10 refers to “the information compris[ing] information about status of a mobile unit and communication with the Internet comprises communication with a call center.” The Office action cites column 70, lines 28-32, column 71, lines 12-14, and column 75, lines 19-20. No reference is made to a call center in the portions of Breed ’132 cited by the Office action. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Claim 19 refers to “the risk related information compris[ing] information analyzed by fusion techniques to confirm risk assessment and identify malfunctioning sensors.” The Office action cites column 52, lines 20-61 and argues that “Breed et al discusses vehicles sharing information to determine evasive action and be able to avoid the collision if possible.” No reference is made to “the risk related information compris[ing] information analyzed by fusion techniques to confirm risk assessment and identify malfunctioning

sensors” in the portions of Breed ’132 cited by the Office action. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Furthermore, claims 2-5, 8, 10 and 15-19 incorporate all of the limitations of claim 1 and are therefore patentable over Breed ’132 for at least the reasons discussed *supra*. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claim 20

Breed ’132 Does Not Discuss a Traffic Communication Center

Claim 20 refers to “the processor comprising means for selecting a path for communicating information processed by data fusion between at least one of the mobile units and a traffic communication center.” The Office action alleges that Col. 49 – Col. 52 of Breed ’132 anticipates this portion of the claim without supporting arguments. After studying the cited portion, Applicant fails to see any reference to “a traffic communication center.” In fact, Col. 49 – Col. 52 addresses “Communication with other vehicles – Collision Avoidance.” Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Data Fusion is Inappropriate for Breed ’132

In addition, as discussed *supra* with reference to claim 1, the use of sensor fusion is inappropriate for Breed ’132.

Breed ’132 Does Not Discuss Selecting a Path for Communicating Information

Furthermore, as discussed *supra* with reference to claim 1, Applicant fails to see any reference to a “the processor comprising means for selecting a path for communicating information.” Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

For at least these reasons, claim 20 is patentable over Breed ’132. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 21-24 and 26

Claim 23 refers to “communicating location data for at least some of the mobile units from the mobile units through a communications path comprising receiving and transmitting means of other mobile units to a center, the center having means to receive, store and analyze location data to develop traffic condition information.” The Office action provides no

supporting argument or citations. Furthermore, with reference to claims 8 and 10 *supra*, Breed '132 appears to make no reference to “a communications path comprising receiving and transmitting means of other mobile units to a center.” Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Claim 24 refers to “the center further compris[ing] means to communicate traffic condition information about an environment surrounding at least some mobile units to the at least some of the mobile units.” No reference is made to a center in the portion of Breed '132 (column 71, lines 1-17) cited by the Office action. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Claim 26 refers to the “data fusion of real time location information of mobile units in proximity to each other to obtain a better estimate of real time location of each of said units in proximity.” As discussed *supra* with reference to claim 1, the use of sensor fusion is inappropriate for Breed '132. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Furthermore, claims 21-24 and 26 incorporate all of the limitations of claim 20 and are therefore patentable over Breed '132 for at least the reasons discussed *supra*. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claim 27

Claim 27 refers to “an onboard processor receiving inputs from the sensors, the processor analyzing the inputs using data fusion techniques to determine collision risk related information.” The Office action alleges that Col. 38, lines 54-67 of Breed '132 anticipates this portion of the claim by arguing that Breed '132 “discloses using neural fuzzy system computer algorithms to derive optimum vehicle warning and control signals in order to fuse the data received by all of the sensors and decide if there is a risk of a collision and if action needs to be taken.” As discussed *supra* with reference to claim 1, the use of sensor fusion is inappropriate for Breed '132. For at least the reasons discussed *supra*, claim 27 is patentable over Breed '132. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 28-29

Claims 28-29 incorporate all of the limitations of claim 27 and are therefore patentable over Breed '132 for at least the reasons discussed *supra*. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claim Rejections – 35 U.S.C. §103

Claims 6, 7, 9, and 11

The Office action rejects claims 6, 7, 9, and 11 as allegedly being unpatentable over U.S. Patent No. 6,405,132 (Breed '132) in view of U.S. Patent No. 6,742,037 (Hall '037) under 35 U.S.C. § 103(a). This rejection is not well-founded because Hall '037 does not remedy the deficiency of Breed '132 with respect to claims 1 and 8 discussed *supra*. Therefore, claims 6-7, 9, and 11 remain patentable over Breed '132 even when combined with Hall '037. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 22 and 26

The Office action rejects claims 22 and 26 as allegedly being unpatentable over U.S. Patent No. 6,012,012 (Fleck '012) in view of U.S. Patent No. 6,405,132 (Breed '132) under 35 U.S.C. § 103(a). This rejection is not well-founded because Breed '132 does not remedy the deficiency of Fleck '012 with respect to claim 20 discussed *supra*. Therefore, claims 22 and 26 remain patentable over Fleck '012 even when combined with Breed '132. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

Claims 30-32

The Office action rejects claims 30-32 as allegedly being unpatentable over U.S. Patent No. 6,331,762 (Bertness '762) in view of U.S. Patent No. 5,809,437 (Breed '437) under 35 U.S.C. § 103(a). There appears to be an error with the cited reference. Bertness '762 is entitled Energy Management System for Automotive Vehicle and the Office action appears to refer to U.S. Patent No. 6,405,132 (Breed '132) instead of Bertness '762. Accordingly, this response addresses Breed '132, not Bertness '762 and Applicant respectfully traverses.

Claim 30 refers to “an onboard processor receiving inputs from the sensors, at least two different types of sensors providing inputs pertaining to each of the monitored variables, the processor using fusion techniques to determine a best value of monitored variables.” The Office action alleges that col. 72, lines 23-27 of Breed ’132 anticipates this portion of the claim without supporting arguments. Breed ’132 states at col. 72, lines 23-27 that “in order to completely eliminate automobile accidents, a diagnostic system is required on the vehicle that will provide advanced warning of any potential vehicle component failures. Such a system is described in U.S. Pat. No. 5,809,437 (Breed).” The portion of Breed ’132 cited by the Office action does not disclose “at least two different types of sensors providing inputs pertaining to each of the monitored variables.” In addition, as discussed *supra* “the use of . . . sensor fusion . . . is inappropriate for” the invention disclosed in Breed ’132. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

Furthermore, the Office action states that “Breed [’132] specifically fails to disclose alerting a driver of the vehicle when a best value of a variable is outside a predetermined limit.” Breed ’437 is cited because “Breed [’437] discloses notifying a driver as soon as an abnormal pattern is recognized so this would be when a variable is outside a predetermined limit.” Breed ’437 does not remedy the deficiency of Breed ’132 discussed *supra*. In fact, the term ‘fusion’ does not even appear in the specification of Breed ’437. Therefore, claim 30 remains patentable over Breed ’132 even when combined with Breed ’437.

Claims 31 and 32

Claim 31 refers to “the variables includ[ing] vehicle speed, wheel speed, distance to nearest other vehicle, location, tire pressure, oil pressure, brake condition, fuel level, outside temperature, wheel slippage on pavement, and visibility limits.” The Office action alleges that col. 3, line 32 through col. 4 line 61 of Breed ’437 anticipates this portion of the claim without supporting arguments. The applicant can find no reference to the following five portions of claim 31 in the cited portion of Breed ’437: (1) distance to nearest other vehicle; (2) brake condition; (3) outside temperature; (4) wheel slippage on pavement; and (5) visibility limits. Accordingly, Applicant respectfully asserts that no prima facie case of anticipation has been made.

In addition, claims 31 and 32 incorporate all of the limitations of claim 30 and are therefore patentable over Breed ’132 and Breed ’437 for at least the reasons discussed *supra*. Accordingly, Applicant respectfully traverses and requests reconsideration and withdrawal of the rejection.

New Claims 33-35

New claims 33-35 are submitted to more completely claim the invention. They are believed to be patentable over the art of record for at least the reasons discussed *supra*.

Conclusion

In view of the foregoing, Applicant submits that all claims are in condition for allowance. Therefore, entry of the offered amendments and early issuance of the Notice of Allowance is respectfully requested. The Examiner is welcome to call the undersigned to discuss any aspect of this application. My direct-dial number (normal hours *Pacific Time*) is: 503-294-9896.

The Commission is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 19-4455.

Respectfully submitted,

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